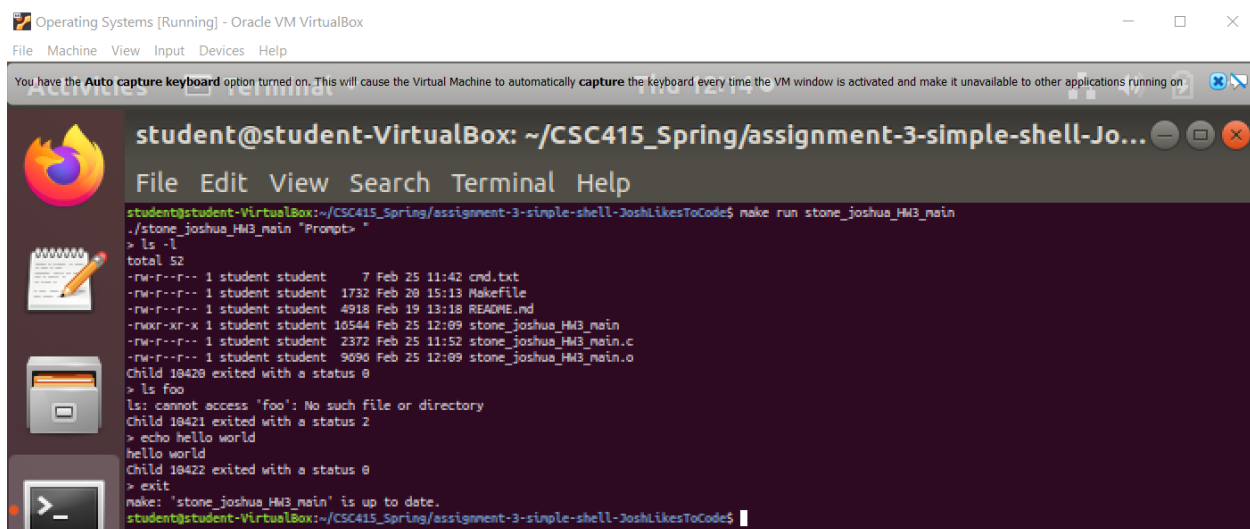


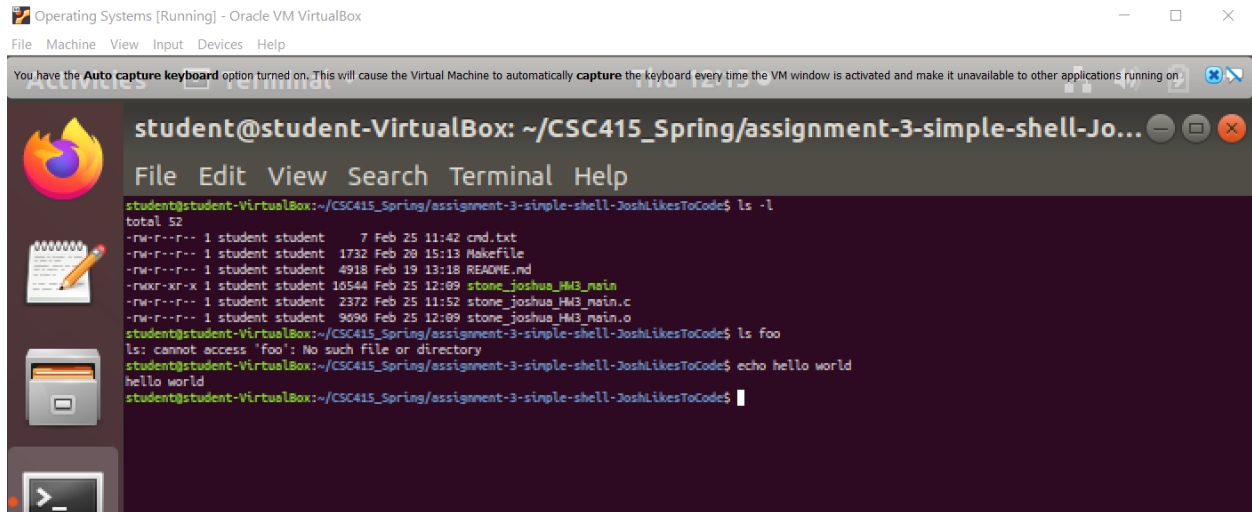
For this program I created a simple shell that parses through user input and then splits that input into tokens which will later be used as commands for our simple shell. Some of the problems I ran into with this assignment included having `execvp()` run infinitely, which I solved by making the program exit when the `user_input` was a blank space or a newline character. Another major problem I had to overcome when programming this assignment was being able to read commands from a `.txt` file. The big issue I had with this problem is after the `.txt` file was parsed and the `execvp()` executed its command, then my program would throw a segmentation fault and exit. I solved this problem with the same logic that solved `execvp()` running infinitely – when `user_input` is a blank space or a newline (or EOF) the program will exit gracefully, but before that it will parse the `.txt` file's command and execute it. The last issue I ran into was related to exiting, where after the user typed "exit" when prompted, the program would display a final "Child %d exited with a status %d" and then exit, which was not the desired way to exit the program. I solved this by moving the function that checks if `user_input == "exit"` above the `execvp()` function, so that way the program exits before it executes any further commands. I have included screen shots below:

Here's the screenshot of the compilation along with the simple shell:



```
student@student-VirtualBox: ~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$ make run stone_joshua_HM3_main
./stone_joshua_HM3_main "Prompt> "
> ls -l
total 52
-rw-r--r-- 1 student student  7 Feb 25 11:42 cmd.txt
-rw-r--r-- 1 student student 1732 Feb 20 15:13 Makefile
-rw-r--r-- 1 student student 4918 Feb 19 13:18 README.md
-rwxr-xr-x 1 student student 10544 Feb 25 12:09 stone_joshua_HM3_main
-rw-r--r-- 1 student student 2372 Feb 25 11:52 stone_joshua_HM3_main.c
-rw-r--r-- 1 student student 9090 Feb 25 12:09 stone_joshua_HM3_main.o
Child 18420 exited with a status 0
> ls foo
ls: cannot access 'foo': No such file or directory
Child 18421 exited with a status 2
> echo hello world
hello world
Child 18422 exited with a status 0
> exit
make: 'stone_joshua_HM3_main' is up to date.
student@student-VirtualBox:~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$
```

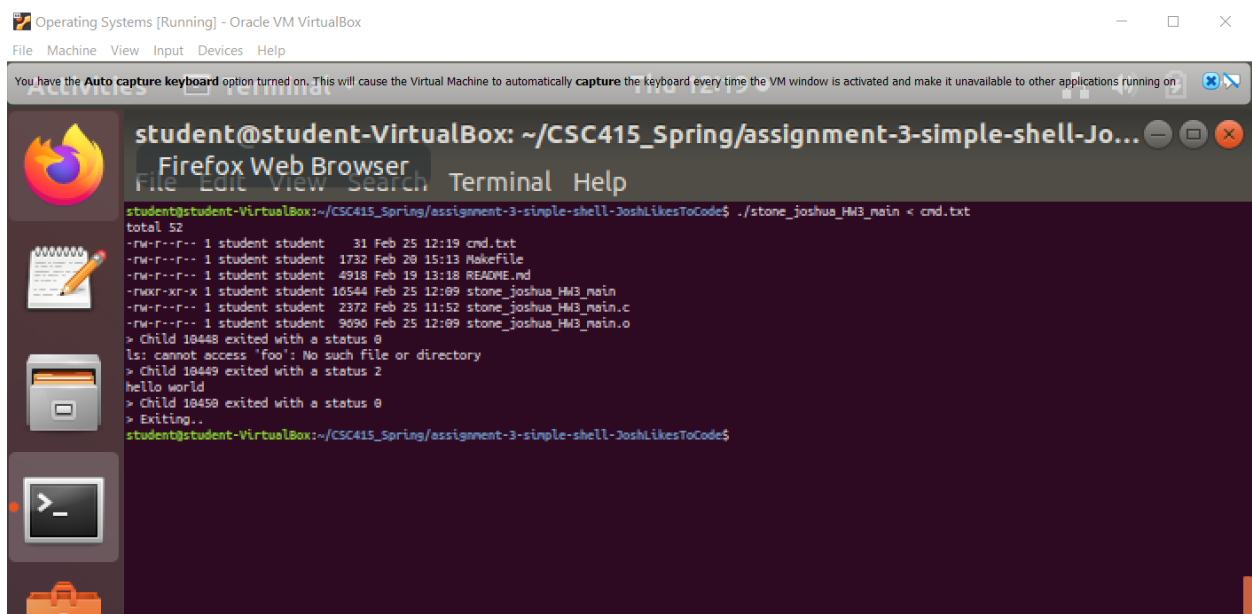
Here's the screen shot of the same commands used in the command line (for validation) :



The screenshot shows a terminal window titled "student@student-VirtualBox: ~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode\$". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal output is as follows:

```
student@student-VirtualBox:~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$ ls -l
total 52
-rw-r--r-- 1 student student 7 Feb 25 11:42 cmd.txt
-rw-r--r-- 1 student student 1732 Feb 20 15:13 Makefile
-rw-r--r-- 1 student student 4918 Feb 19 13:18 README.md
-rwxr-xr-x 1 student student 10544 Feb 25 12:09 stone_joshua_HM3_main
-rw-r--r-- 1 student student 2372 Feb 25 11:52 stone_joshua_HM3_main.c
-rw-r--r-- 1 student student 9090 Feb 25 12:09 stone_joshua_HM3_main.o
student@student-VirtualBox:~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$ ls foo
ls: cannot access 'foo': No such file or directory
student@student-VirtualBox:~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$ echo hello world
hello world
student@student-VirtualBox:~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$
```

Lastly, here's the screen shot of the compilation when ran with < cmd.txt which contains the same commands as the above examples within the .txt file:



The screenshot shows a terminal window titled "student@student-VirtualBox: ~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode\$". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal output is as follows:

```
student@student-VirtualBox:~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$ ./stone_joshua_HM3_main < cmd.txt
total 52
-rw-r--r-- 1 student student 31 Feb 25 12:19 cmd.txt
-rw-r--r-- 1 student student 1732 Feb 20 15:13 Makefile
-rw-r--r-- 1 student student 4918 Feb 19 13:18 README.md
-rwxr-xr-x 1 student student 10544 Feb 25 12:09 stone_joshua_HM3_main
-rw-r--r-- 1 student student 2372 Feb 25 11:52 stone_joshua_HM3_main.c
-rw-r--r-- 1 student student 9090 Feb 25 12:09 stone_joshua_HM3_main.o
> Child 18448 exited with a status 0
ls: cannot access 'foo': No such file or directory
> Child 18449 exited with a status 2
hello world
> Child 18450 exited with a status 0
> Exiting..
student@student-VirtualBox:~/CSC415_Spring/assignment-3-simple-shell-JoshLikesToCode$
```